

BULATOV, P.K., doktor meditsinskikh nauk; ZLYDNIKOV, D.M.; CHERNORUTSKIY, M.V.,  
deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR, professor, zavedu-  
yushchiy.

The Russian scientist A. Rodoskiy was the first to establish the neuro-  
genetic etiology of bronchial asthma. Klin.med. 31 no.3:91-93 Mr '53.  
(MLRA 6:5)

1. Gospital'naya terapeuticheskaya klinika I Leningradskogo meditsinskogo  
instituta imeni I.P. Pavlova. 2. Akademiya meditsinskikh nauk SSSR (for  
Chernorutskiy). (Asthma) (Rodoskiy, Andrei)

RODOSKII, K. A.

Rodoskii, K. A. On the distribution of prime numbers in short arithmetic progressions. Izvestiya Akad. Nauk SSSR Ser. Mat. 12, 123-128 (1948). (Russian)

This paper is concerned with the determination of the number of primes in comparatively short arithmetic progressions. More precisely, assuming  $(D, l) = 1$ , and letting  $\pi(x, D, l) = \sum_{n \leq x} p \equiv l \pmod{D}$ , the author proves the following theorem. Let  $\epsilon$  be any small fixed positive number and  $\log^{-\epsilon} D \leq \log x \leq \log D$ ,  $D \geq D_0(\epsilon)$ . Then

$$\pi(x, D, l) = \frac{1}{\varphi(D)} \sum_{n \leq x} 1/\log n - E \frac{x(l)}{\varphi(D)} \sum_{n \leq x} \frac{n^{\beta_1}}{\log n} + \frac{x}{\varphi(D) \log x} O \left( \exp \left[ -A(\epsilon) \frac{\log x}{\log D} \right] \right),$$

where  $A > 0$  depends on  $\epsilon$ ; the  $O$  is uniform in  $D$ ;  $x$  is a certain "exceptional" character;  $E = 0$  or 1 and  $\beta_1$  is a zero of  $L(s, x)$ . An analogous result is given for  $\psi(x, D, l) = \sum_{n \leq x} \Lambda(n)$  summed over  $n \leq x$ ,  $n \equiv l \pmod{D}$ , where  $(D, l) = 1$ ,  $A(n) = \log n$  for  $n = p^\alpha$  and 0 otherwise. In order to obtain the theorem stated above the author utilizes his previous results [same Izvestiya Ser. Mat. 12, 47-56 (1948); these Rev. 9, 413] concerning upper estimates for the number of  $L$ -series (with characters modulo  $D$ ) which have zeros in certain rectangles.

H. N. Shapiro (New York, N. Y.)

Source: Mathematical Reviews,

Vol. 17 No. 1

*RODOSKIJ, K.A.*

**Cudakov, N. G., and Rodoskij, K. A.** New methods in the theory of Dirichlet's  $L$ -functions. *Uspehi Matem. Nauk* (N.S.) 4, no. 2(30), 22-56 (1949). (Russian)

This is an expository paper mainly devoted to the method of "density of zeros". This is the name attached by Russian number-theorists to the application in prime-number theory of estimates of  $N(\sigma, T)$ , the number of zeros of an  $L$ -function in the rectangle  $\sigma \leq \Re(s) \leq 1$ ,  $-T \leq \Im(s) \leq T$ , where  $\sigma > \frac{1}{2}$  and  $T \geq 1$ . The authors take these estimates of  $N(\sigma, T)$  for granted and discuss only how they are applied. The paper consists of four sections.

In the first section the authors give a very complete proof of a result on trigonometric sums involving prime numbers which was announced earlier by Cudakov [Doklady Akad. Nauk SSSR (N.S.) 58, 1291-1294 (1947); these Rev. 9, 333]. Actually in this part of the paper the authors go much further in the direction of completeness than seems necessary, for they give detailed proofs of a number of preliminary theorems which are either immediate corollaries or obvious generalizations of well-known results. Thus Lemma 1 is a straightforward application of integration by parts, Lemma 2 is a direct corollary of the second mean-value theorem, Lemma 3 is a variant of the Fourier summa-

tion formula, and Theorem 1 is a rather routine generalization of a well-known theorem of van der Corput [Landau, Vorlesungen über Zahlentheorie, v. 1, Hirzel, Leipzig, 1927, Satz 332].

The second section is mainly devoted to Cudakov's proof of the Goldbach-Vinogradov theorem [Ann. of Math. (2) 48, 515-545 (1947); these Rev. 9, 11], starting from the relevant theorem on  $N(\sigma, T)$  [op. cit., Theorem 2]. The authors sketch the proof of the essential approximation formula for  $f(x) = \sum_{p>x} (\ln p)x^p$  [op. cit., Theorem 3] and the deduction therefrom of the asymptotic formula for the coefficients of  $f'(x)$ . In addition they show in detail how the approximation formula for  $f(x)$  leads to the theorem that almost all even natural numbers are sums of two odd primes. This latter proof is not found in Cudakov's paper and is attributed by the authors to V. Arhangel'skij; it is similar to but slightly neater than the Hardy-Littlewood treatment [Proc. London Math. Soc. (2) 22, 46-56 (1923)]. The section concludes with a brief resume of a paper of Cudakov [Izvestiya Akad. Nauk SSSR. Ser. Mat. 12, 31-46 (1948); these Rev. 9, 499] on the finite differences of  $\psi(x, k, l)$ , where  $\psi(x, k, l)$  has its usual meaning in prime-number theory.

Source: Mathematical Reviews.

Vol. 13 No. 9

*[Signature]*

In the third section the authors sketch Linnik's proof that if  $k > 1$  and  $(l, k) = 1$ , then there exists a prime number  $p$  such that  $p \equiv l \pmod{k}$  and  $p < k^c$ , where  $c$  is an absolute constant [Mat. Sbornik N.S. 15(57), 3-12, 139-178, 347-368 (1944); 16(58), 101-120 (1945); these Rev. 6, 260; 7, 146]. The reviewer regrets that the authors did not treat the material of this section with the completeness of detail which characterizes the first section, for even after this exposition Linnik's proof will remain an enigma to many number-theorists.

The last section has no direct connection with the method of density of zeros and was actually written by Linnik. In it he shows that the Lindelöf hypothesis is equivalent to asserting that as  $T \rightarrow \infty$  the relation

$$\sum_{n=1}^{\infty} \tau(n)n^{iT} \exp\left(-\frac{1}{4}\ln^2 \frac{T}{2\pi n}\right) = O(T^{1+\epsilon})$$

holds for any positive  $\epsilon$ , where  $\tau(n)$  denotes the number of divisors of  $n$ .

Although this paper is disappointing in some ways (mainly in the conciseness of its third section), it still is a very welcome addition to the literature of expository papers in analytic number theory.

P. T. Bateman

Source: Mathematical Reviews, Vol 13 No. 9

CYDAKOV, N.G.

2  
X

8/1/01  
good

60/49T51

K.A. RODOSSKIY

USSR/Mathematics

Dirichlet's Functions

Jul/Aug 49

"Zeros of Dirichlet's L-Functions," K. A. Rodossskiy,  
14 pp

"Iz Ak Nauk SSSR, Ser Matemat" Vol XIII, No 4

New method for evaluating the number of Dirichlet's  
L-functions which have zeros close to the line  
sigma equal to one. Author obtained a stronger  
evaluation using this method than was obtained in  
previous work. Results obtained are used to improve  
the remaining term in evaluation Chebyshev's psi  
function  $f(x,D,1)$  for comparatively small values of  
x. Submitted 18 May 48.

60/49T51

Rodoskiy, K.A.

Cudakov, N. G., and Rodoskiy, K. A. On generalized characters. *Doklady Akad. Nauk SSSR (N.S.)* 73, 1137-1139 (1950). (Russian)

The authors define a generalized character as a complex-valued function  $h(n)$  on the positive integers such that  $h(mn) = h(m)h(n)$ ,  $|h(n)|$  is 0 or 1 for any  $n$ , and  $\sum_{n=1}^x h(n)$  is bounded for all positive integers  $x$ . The nonprincipal residue-characters of Dirichlet [cf. E. Landau, *Vorlesungen über Zahlentheorie*, Hirzel, Leipzig, 1927, vol. 1, pp. 83-87] obviously satisfy these requirements. By considering the sum  $\sum_{n=1}^m (m-n)^2 \sum_{d|(n)} h(d)$  with a suitable  $m$ , the authors prove that if  $h(n)$  is a real generalized character and if  $M$  is the maximum of  $|\sum_{n=1}^x h(n)|$  for all positive integers  $x$ , then  $\sum_{n=1}^m |h(n)| n^{-1} > (14M)^{-1}$ . They also remark that the lemma used by Estermann [J. London Math. Soc. 23, 275-279 (1948); these Rev. 10, 356] in his proof of Siegel's theorem is valid for real generalized characters.

P. T. Bateman (Urbana, Ill.).

Source: Mathematical Reviews,

Mathematical Reviews  
Vol. 15 No. 3  
March 1954  
Number Theory

7-13-54  
LL

① Math 3

Rodoskii, K. A. On the number of L-functions having zeros in some rectangle. Ukrain. Mat. Žurnal 3, 399-403 (1951). (Russian)

The author proves that for  $\Delta < 1$  the number of L-functions (formed by characters mod  $D$ ) which have zeros in the rectangle  $\Delta \leq \sigma \leq 1$ ,  $|t - T| \leq \frac{1}{2}$  is  $O(\log^4(DT)(D^2T)^{(1-\Delta)/4})$ . Similar results were proved by Linnik [Mat. Sbornik N.S. 15(57), 3-12, 139-178 (1944); these Rev. 6, 260]. The author's proof is surprisingly short. H. Heilbronn.

FEDERAL BUREAU OF INVESTIGATION  
U.S. DEPARTMENT OF JUSTICE

232T90

USSR / Mathematics - Number Theory, 1 Jun 52  
Characters

"The Number of Zeros of All L-Functions With  
Characters According to a Given Modulus," K. A.  
Rodoskij

"Dok Ak Nauk SSSR" Vol 84, No 4, pp 669-671

Gives a new theorem concerning the number of zeros  
of all L-functions with characters belonging to  
a sufficiently large modulus close to the line

232T90

$s = 1$ . Namely, demonstrates the following  
theorem: if  $N(A; -T, T; D)$  designates the number  
of zeros of all L-functions with characters  
modulo D lying in the rectangle  $A \leq s \leq 1$ ,  $-t \leq t \leq T$ ,  
then  $N(A; -T, T; D) \leq c(DT)^{9(1-A)/24} \ln 2DT$ , where  
 $\Delta$  is a certain number between 0.9 and 1,  
 $T = D^{8/3}$ ,  $D \leq D_0$  ( $c, D_0$  are abs pos const). Sub-  
mitted by Acad I. M. Vinogradov 1 Apr 52.

232T90

Kolosov, R.A.  
Mathematical Reviews  
Vol. 14 No. 8  
Sept. 1953  
Number Theory

7-14-54  
LL

Rodoskii, K. A. On some estimates of the quantities  
 $L(1, \chi)$ . Doklady Akad. Nauk SSSR (N.S.) 86, 889-891  
(1952). (Russian)

Let  $D$  be a positive integer,  $4 \log \log D / \log D < \eta < 1/10$ .  
The author shows that there are only  $O(D^{\eta} \log^4 D)$   $L$ -series  
formed by characters mod  $D$ , which do not satisfy the  
inequality

$$|\log |L(1, \chi)|| < O(1) + \log \eta^{-1}.$$

For the proof the author refers to a previous paper [Ukrain.  
Mat. Zurnal 3, 399-403 (1951)] (not accessible to the re-  
viewer). The author also gives the following inequalities:

$$\begin{aligned} L(1, \chi_D^{(2)})L(1, \chi_{dD}^{(2)}) &= O(\log d \log(dD)), \\ L(1, \chi_d^{(4)}\chi_D^{(2)}) &= O(\log^4 d \log^4(dD)), \\ 1 &= O(\log D)(L(1, \chi_D^{(2)}) + L(1, \chi_{dD}^{(2)})), \end{aligned}$$

where  $\chi_D^{(2)}$  and  $\chi^{(4)}$  denote quadratic and quartic characters  
and where in the last inequality

$$(d, D) = 1, \quad \log d < \log D / \log \log D.$$

H. Heilbronn (Bristol).

FA 234184

RODOSSKIY, K. A.

USSR/Mathematics - Zeta Function

21 Oct 52

"Theory of the Zeta Function," K. A. Rodoskiy

"Dok Ak Nauk SSSR" Vol 86, No 6, pp 1069-1070

Gives a new theorem on the distribution of small values of zeta abs,  $\zeta(s)$ , in the crit zone. Cites similar works of F. C. Titchmarsh (1947); Rodoskiy, Ukr Mat Zhur" Ukrainian Math J, 3, 4, 339 (1951); N. G. Chudakov, Annals of Math [English language], 48, 3, 516 (1947). Results obtained are considerably better than previous, but only for delta close to 1 (in connection with the exponential expression in delta).

Submitted by Acad I. M. Vinogradov 16 Aug 52. 234184

Rodoszki, K. A.

Mathematical Reviews  
Vol. 15 No. 3  
March 1954  
Number Theory

7-13-54  
LL

(1) math 4

Rodoszki, K. A. On the least prime number in an arithmetic progression and the zeros of L-functions. Doklady Akad. Nauk SSSR (N.S.) **88**, 753-756 (1953). (Russian)  
Using the results of the paper reviewed above, the author simplifies the proof of Linnik's theorem [see references cited above and Mat. Sbornik N.S. **15**(57), 347-368 (1944); these Rev. 6, 260] that the smallest prime  $p \equiv l \pmod{D}$  satisfies for  $(D, l) = 1$  the inequality  $p = O(D^c)$ , where  $c$  is an absolute constant.  
H. Heilbronn (Bristol).

RODOSSIY, I. A.

"On the Zeros of L-Functions and Prime Numbers." Dr Phys-Math Sci,  
Mathematics Inst imeni V. A. Steklov, Acad Sci USSR, 16 Dec 54. (VN, 7Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR  
Higher Educational Institutions (12)  
SO: Sum. No. 556 24 Jun 55

RODOSKII, K. A.

USSR/Mathematics - Number theory, least primes

FD-458

Card 1/1 : Pub. 64 - 10/11

Author : Rodoskiy, K. A. (Saratov)

Title : Least prime in an arithmetic progression

Periodical : Mat. sbor., 34 (76), 331-356, Mar/Apr 1954

Abstract : Expounds in detail a new method for evaluating the least primes in arithmetic progressions, which was first briefly communicated in his article "Least prime in an arithmetic series and the zeroes of the L-functions," Doklady Akademii Nauk SSSR, Vol 88, No 5 (1953), 753-756.

Institution :

Submitted : May 20, 1953

LINNIK, Yu.V.; RODOSSKIY, K.A.

Nikolai Grigor'evich Chudakov; 50th birthday. Usp.mat.nauk 10  
(MIRA 9:1)  
no.3:213-215 '55.  
(Chudakov, Nikolai Grigor'evich, 1904-) (Bibliography--Mathematics)

Rodoski, K.A.

L - F/W

✓  
 62 Rodoski, K. A. On the distribution of small values of  
 the modulus of the  $\zeta$ -function. Izv. Akad. Nauk SSSR.  
 Ser. Mat. 19, 97-102 (1955). (Russian)

The author proves a theorem on the absolute value of a segment of an ordinary Dirichlet series and uses it to prove the following result on the Riemann zeta-function. Suppose  $T \geq 3$  and  $(\ln(8c \ln T))^{1/2}/(\ln T)^{1/2} + \frac{1}{2} \leq \Delta \leq 1$ , where  $c$  is a certain positive constant! For  $n=0, 1, \dots, [\frac{1}{2}T]$  let  $R_n$  be the rectangle in the plane of the complex variable  $s$  defined by  $\Delta \leq \operatorname{Re}(s) \leq 1$ ,  $\frac{1}{2}T+n \leq \operatorname{Im}(s) < \frac{1}{2}T+n+1$ . Then the number of rectangles  $R_n$  for which

$$\min_{s \in R_n} |\zeta(s)| < 5 \{ \ln T \cdot T^{(\Delta-1)(1-\Delta)/(2-2\Delta+2\Delta^2)} \}^{-1}$$

does not exceed

$$c \ln^{1/2} T \cdot T^{(\Delta+1)(1-\Delta)/(2-2\Delta+2\Delta^2)}$$

A cruder form of this result was given earlier [Dokl. Akad. Nauk SSSR (N.S.) 86, 1069-1070 (1952); MR 14, 451].  
*P. T. Bateman* (Urbana, Ill.).

Rodoskiy, K.A.

Rodoskiy, K.A. The exceptional zero and the distribution of prime numbers in short arithmetic progressions. Mat. Sb. N.S. 36(78), 341-348 (1955).  
 (Russian)

The following two theorems are proved. (1) Let  $(D, l) = 1$ ,  $l \geq 14 \ln D \geq \ln x \geq \ln^3 D$ . Then positive absolute constants  $D_1, A_1, A_2$  exist such that

$$\left| \Psi(x, D, l) - \frac{x}{\varphi(D)} (1 - E(D) \tilde{\chi}(l) \tilde{\beta} x^{l-1}) \right| < \frac{x}{\varphi(D)} \left\{ A_2 \ln^2 D \left( \frac{lA_1}{\delta_0 \ln D} \right)^{-4, \ln x \ln D} + \frac{1}{D} \right\}$$

for  $D > D_1$ ,  $\varphi(D)$  is Euler's  $\varphi$ -function, and

$$\begin{aligned} E(D) &= 1, \quad \delta_0 = 1 - \tilde{\beta} && \text{if } 1 - \tilde{\beta} \geq A_1 \ln^{-1} D \\ E(D) &= 0, \quad \delta_0 = A_1 \ln^{-1} D && \text{if } 1 - \tilde{\beta} > A_1 \ln^{-1} D \end{aligned}$$

(2) Positive absolute constants  $D_1, A_3, A_4, A_5$  exist such that if  $x^{1-4} \leq u \leq x, \ln x / \ln \ln x \geq A_4 \ln D$  and  $D \geq D_1$ , then

$$\left| \Psi(x+u, D, l) - \Psi(x, D, l) - \frac{u}{\varphi(D)} (1 - E(D) \tilde{\chi}(l) x^{l-1}) \right| < A_5 \delta_0 \frac{u}{\varphi(D)}.$$

$E(D)$  and  $A_5$  being defined as above. The proofs of the above make use of an improved estimate for  $N(\Delta, T, D)$  for  $0.9 \leq \Delta \leq 1, T \geq 3, \ln D \geq 12$ . W. H. Simmons.

Rodoskiy, K. A.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow,  
Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.  
Postnikov, A. G. (Moscow). On L-series for Modulus, Which Equals  
the Exponent of the Prime. 11

Rodoskiy, K. A. (Saratov). On Distribution of Primes in  
Short Arithmetical Progressions. 11-12

There is 1 USSR reference.

Romanov, N. P. (Tashkent). Asymptoticity of Power Series  
on Boundaries of Convergence Circle and Limit Theorems in  
the Theory of Numbers. 12-13

There are 3 references, 2 of which are USSR, and 1 English.

Romanov, N. P. (Tashkent). Operator Methods in the Theory  
of Numbers. 13

Mention is made of Chebyshev, P. L., Shnirel'man, L. G., and  
Postnikov, A. G.

Card 5/80

RODOSSKIY, K. A.

SUBJECT USSR/MATHEMATICS/Number theory  
 AUTHOR RODOSSKIY K.A.  
 TITLE On power remainders and zeros of the L-functions.  
 PERIODICAL Izvestija Akad.Nauk 20, 303-306 (1956)  
 reviewed 4/1957

CARD 1/2 PG - 715

The author proves that if  $D$  is a prime number,  $e \leq \psi \leq \frac{1}{2} \log D$ ,  $\chi$  is a non-principal residue-character modulo  $D$ , and  $L(s, \chi)$  has no zeros in the rectangle

$$1 - \psi / \log D < \operatorname{Re} s < 1, \quad |\operatorname{Im} s| < \min \{ e^\psi / \log D, 1 \},$$

then there is a positive integer  $n$  less than  $D^{A(\log \psi) / \psi}$  such that  $\chi(n) \neq 1$ , where  $A$  is an absolute constant. The proof is based on relatively crude known results about the density of zeros of  $L(s, \chi)$  outside the above rectangle. It follows that if  $k$  is a given positive integer, if  $D \equiv 1 \pmod{k}$ , and if it is known that  $L(s, \chi)$  has no zeros in the above rectangle for some non-principal  $\chi$  modulo  $D$  whose  $k$ -th power is principal, then  $N_{\min}(D, k) < D^{A(\log \psi) / \psi}$ , where  $N_{\min}(D, k)$  is the least positive integer which is not congruent to a  $k$ -th power modulo  $D$ . This result is of interest mainly because of its generality and not so much because of its sharpness in the presence of specific information

Izvestija Akad.Nauk 20, 303-306 (1956)

CARD 2/2

PG - 715

about the zeros of the L-functions. For example, under the assumption of the Extended Riemann Hypothesis it was proved by Ankeny that  $N_{\min}(D, k)/\log^2 D$  is bounded for fixed  $k$ , whereas the present paper gives only that

$N_{\min}(D, k) < \left(\frac{1}{2} \log D\right)^{2k}$ . Again, if we combine the results of this paper with the established theorem that the number of L-functions modulo  $D$  which have zeros in the above rectangle is less than  $e^{B\sqrt{k}}$ , where  $B$  is an absolute constant, we get  $N_{\min}(D, k) < D^C (\log \log k)/(\log k)$  for  $k \geq 3$ , where  $C$  is an absolute constant; however, Buchstab has proved the more specific result that  $N_{\min}(D, k) < D^{(\log \log k+2)/(2 \log k)}$  for  $k > e^{53}$ , as well as similar results for smaller values of  $k$ .

RODOSSKII, K.A.

2

1-FW

Rodoskii, K. A. On the exceptional zero. Izv. Akad. Nauk SSSR. Ser. Mat. 20 (1956), 667-672. (Russian) *Mutu*  
The author considers the real zeros of  $L$ -functions formed with real primitive residue characters modulo  $\mathbb{Z}^s$  for  $D > 100$ . For fixed  $\epsilon \in (0, 0.025]$  it is shown that there is at most one zero  $\beta$  of one exceptional  $L$ -function of this class which fails to satisfy

$$1 - \beta \geq \min\{\epsilon; 0.015 \ln^{-5} D \cdot D^{-20s}\}.$$

A consequence is that, without exception,

$$1 - \beta \geq C(\epsilon) \cdot D^{-30s},$$

effectively a result due to Siegel [see, e.g., S. Chowla, Ann. of Math. (2) 51 (1950), 120-122; 11, MR 420].

F. V. Atkinson (Canberra).

(smw)

AUTHOR: Rodoskiy, K.A. SOV/140-58-3-25/34

TITLE: On the Density of the Zeros of L-functions (O plotnosti nuley L-funktsiy)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1958, Nr 3, pp 191-197 (USSR)

ABSTRACT: In former papers [Ref 1,2] on the theory of the  $\zeta$ -functions the author considered the density of distribution of small values  $|\zeta(s)|$ . The method applied in this case is improved in the present paper.  
Let  $A$  be a finite set of pairs of integer numbers  $(r,k)$ . Let to every pair correspond a complex number  $\zeta(r,k) = \beta(r,k) + i\gamma(r,k)$  in the rectangle  $R: \sigma_0 < \sigma \leq \sigma_1$ ,  $t_0 \leq t \leq t_1$ . Let  $N(A)$  be the number of elements of  $A$ . Let  $\{f_r(s)\}$  be a finite system of functions regular in  $R$ .  
Theorem: Let the following conditions be satisfied:  
1.) For every  $t_0 \in [T_0, T_1]$  there do not lie in  $(\sigma_0 < \sigma \leq 1, t_0 \leq t \leq t_0 + B)$  more than  $H$  numbers  $\zeta(r,k)$  with the same  $r$ .

Card 1/3

SOV/140-58-3-25/33

On the Density of the Zeros of L-functions

$$2.) |f_r(\varphi(r,k))| \geq M_0 > 0 \text{ for all } (r,k) \in \mathbb{A}.$$

Then it is

$$N(A) \leq 8 H \lambda M_0^{-2} \max_{0 \leq v \leq \lambda} (\delta \gamma u^{2v})^{-1} \cdot I(v)$$

Here it is

$$I(v) = \sum_{(r)} \int_{\sigma_0}^{\sigma_1} \int_{T_0}^{T_1} |f_r(v)(s+it)|^2 d\sigma dt,$$

$$\lambda \text{ an arbitrary natural number, } f_r(v)(s) = \frac{d^v}{ds^v} f_r(s),$$

$$M_1 > M_0, M_1 > \max_{(r)} \max_{1 \leq v \leq \lambda} \max_{s \in R} |f_r(v)(s)|, u = \left( \frac{M_1}{M_0} \right)^{1/\lambda},$$

$$\delta = \frac{\sigma_1 - \sigma_0}{[\sqrt{8}u(\sigma_1 - \sigma_0) + 1]}, \gamma = \frac{T_1 - T_0}{[\sqrt{8}u(T_1 - T_0) + 1][\sqrt{2}B^{-1} + 1]}$$

As an application of this theorem the author estimates for certain L-functions the density of distribution of the zeros.

Card 2/3

On the Density of the Zeros of L-functions

SOV/140-58-3-25/34

The estimation improves a former result of the author [Ref 3] and in certain cases it is better than an analogous estimation of Tatusawa [Ref 4].

There are 7 references, 6 of which are Soviet, and 1 is Japanese.

ASSOCIATION: Kuybyshevskiy aviatsionnyy institut (Kuybyshev Aviation Institute)

SUBMITTED: October 14, 1957

Card 3/3

RODOSSKIY, K.A. (Voronezh)

Some aspects of I. M. Vinogradov's method. Izv. vys. ucheb. zav.; mat.  
no.1:123-132 '65. (MIRA 18:3)

RODOSSKIY, K.A.

Regularity in the distribution of prime numbers. Usp.mat.nauk  
17 no.3:189-191 My-Je '62. (MIRA 15:12)  
(Numbers, Prime)

RODOSSKIY, K.A. (Voronezh)

On certain trigonometric sums. Mat.sbor. 60 no.2:219-234 F '63.

(MIRA 16:4)

(Functions of real variables) (Numbers, Theory of)

RODOSSKIY, K.A.

New application of I.M.Vinogradov's estimates to the Riemann theta-function theory. Dokl. AN SSSR 134 no.6:1303-1304 0 '60.

(MIRA 13:10)

1. Voronezhskiy gosudarstvennyy universitet. Predstavлено akademikom  
I.M.Vinogradovym.  
(Functions, Theta)

84663

S/020/60/134/006/005/031  
C111/C222

161000

AUTHOR: Rodoskiy, K.A.

TITLE: A New Application of Vinogradov's Estimates to Riemann's Zeta  
Function Theory

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 6,  
pp. 1303 - 1304

TEXT: Let  $N(\Delta, T)$  be the number of zeros of  $\zeta(s)$ ,  $s = \sigma + it$  in  
 $\Delta \leq \sigma \leq 1$ ,  $0 \leq t \leq T$ . If  $\Delta$  and  $T$  are independently variable,  $T > 1$  and  
 $\Delta \in (\frac{1}{2}, 1)$ , then

$$(1) \quad N(\Delta, T) < c_1 \ln^{c_2} T \cdot T^{\alpha(\Delta)} (1 - \Delta),$$

where  $c_1, c_2$  are absolute positive constants and  $\alpha(\Delta) \geq 0$ .

With the aid of the new results of I.M. Vinogradov (Ref. 6) it is proved that

$$(4) \quad \alpha(\Delta) \leq 2 + c_3 (1 - \Delta)^{1/3}.$$

Card 1/3

84663

A New Application of Vinogradov's Estimates  
to Riemann's Zeta Function Theory

S/020/60/134/006/005/031  
C111/C222

The proof bases on the following lemmas. Let  $\sigma = \beta + i\tau$  be the zero of the zeta function in  $R \{ \Delta \leq \sigma \leq 1, 1/2 T \leq t \leq T \}$ .

Lemma 1:  $\left| \sum_{n \leq x} n^{-\sigma} \right| \leq c_4 x^{1-\beta} T^{-1}$  for  $x \geq T$

Lemma 2: For  $k \geq 7$  and  $(k+1)^{-1} \ln T \leq \ln x \leq k^{-1} \ln T$  it holds

$$\left| \sum_{x < n \leq T} n^{-\sigma} \right| \leq c_5 \ln T \cdot x^{1-c_6 k^{-2} - \beta}$$

Let  $f(s) = \sum_{y < n \leq z} a_n n^{-s}$ , where  $a_n = \sum_{d/n, d > y} \mu(d)$ , where  $\mu(d)$  is the Möbius function.

Lemma 3: If for each zero  $\sigma \in R$  of the zeta function the inequation  $|f(\sigma)| \geq \frac{1}{2}$  is satisfied, then the number  $Q(\Delta, T)$  of zeros belonging to  $R$  is not greater than  $c_7 \ln^{\frac{c_8}{2}} T \cdot (T y^{1-2\Delta} + z^{2-2\Delta})$ .

Card 2/3

84663

A New Application of Vinogradov's Estimates  
to Riemann's Zeta Function Theory

S/020/60/134/006/005/031  
C111/C222

There are 7 references: 5 Soviet, 1 Hungarian and 1 English.

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet  
(Voronezh State University)

PRESENTED: June 3, 1960, by I.M. Vinogradov, Academician

SUBMITTED: May 21, 1960

Card 3/3

*Rodov, A.*

Rodov, A. Relations between upper bounds of derivatives of functions of a real variable. Bull. Acad. Sci. URSS. Sér. Math. [Izvestia Akad. Nauk SSSR] 10, 257-270 (1946). (Russian. English summary)

Let  $f(x)$  be bounded and have  $n$  bounded derivatives on  $(-\infty, \infty)$ ; let  $M_k$  be the least upper bound of  $|f^{(k)}(x)|$ . The problem of necessary and sufficient conditions on the numbers  $a_0, a_1, a_n$  so that there is a function  $f(x)$  with  $M_j = a_j$ ,  $j=0, k, n$ , was solved by Kolmogoroff [C. R. Acad. Sci. Paris 207, 764-765 (1938); Uchenye Zapiski Moskov. Gos. Univ. Matematika 30, 3-16 (1939); these Rev. 1, 298]. The author now sets the corresponding problem for  $M_j = a_j$ ,  $j=0, i_1, \dots, i_k, n$ . He solves it for  $M_j = a_j$ ,  $j=0, n-2, n-1, n$  and  $j=0, k, n-2, n-1, n$  ( $0 < k < n-2$ ). In particular, he obtains sharp inequalities for  $M_0, M_1, M_2, M_3$ ; for  $M_0, M_1, M_2, M_3, M_4$ ; and for  $M_0, M_1, M_2, M_3, M_4$ . For  $M_0, M_1, M_2, M_3$ ,

his result is as follows:  $M_1 \geq \frac{1}{2} M_2/M_3$ ,  $M_0 \geq \Psi(M_1, M_2, M_3)$ , where  $\Psi$  is the maximum absolute value of  $\psi(x)$ , defined as follows: let  $i_1 = M_1 M_2^{-1} - \frac{1}{2} M_2 M_3^{-1}$ ,  $i = M_1 M_2^{-1} + \frac{1}{2} M_2 M_3^{-1}$ ; then  $\psi'(x) = M_1$  in  $i_1 < x < 2i - i_1$ ,  $\psi''(x) = -M_3$  in  $2i + i_1 < x < 4i - i_1$ ,  $\psi'''(x) = 0$  elsewhere in  $(0, 4i)$ ;  $\psi'(i) = 0$ ,  $\psi'(2i) = 0$ ,  $\psi(3i) = 0$ ;  $\psi(x)$  has period  $4i$  (then  $\Psi(M_1, M_2, M_3) = \psi(4i)$ ). For the other cases the results are expressed in terms of similar but more complicated functions. The idea of the proof is to compare the given  $f(x)$  with a function which is the  $n$ th integral of a step-function and has the same  $M_k$ 's as  $f(x)$  for the prescribed values of  $k > 0$ . For example, in the case of  $M_0, M_1, M_2, M_3$ , the function  $\psi(x)$  described above has  $\max |\psi'''| = M_3$ ,  $\max |\psi''| = M_2$ ,  $\max |\psi'| = M_1$ ; it can then be shown that if  $|f'(3i)| = M_1$ , the assumption  $|f(4i)| < \psi(4i)$  leads to a contradiction. [Not all the statements in the author's summary correspond to the Russian text.]

R. P. Boas, Jr. (Providence, R. I.).

Source: Mathematical Reviews,

Vol. 8, No. 2

RUDOV, A.

Zavisimosti Mezhdu Verkhnimi Granymi Proizvodnykh Funktsiy Deystvitel'nogo Peremennogo. I an, ser. Matem., 10 (1946), 257-270.

SO: Mathematics in the USSR, 1917-1947  
edited by Kurosh, A. G.,  
Markushevich, A. I.,  
Rashevskiy, P. K.  
Moscow - Leningrad, 1948

MORDKHELOVICH, Izrail' Isaakovich [deceased]; RODOV, Aleksandr Borisovich;  
NIZE, V.E., nauchnyy red.; DEMINA, G.A., red.; NESMYSLOVA, L.M.,  
tekhn. red.

[Automation of production operations by means of pneumatics] Avto-  
matizatsiia proizvodstvennykh protsessov sredstvami pnevmatiki. Mo-  
skva, Vses. uchebno-pedagog. izd-vo Proftekhizdat, 1961. 231 p.  
(MIRA 14:12)

(Pneumatic control) (Automation)

RODOV, A.B., inzhener.

Electronic indicator of critical boiler-water levels. Energetik  
4 no.3:15-16 Mr '56. (MIRA 9:6)  
(Indicators for steam engines)(Electronic apparatus and appliances)

VAYNSHTEYN-KOVALEVSKIY, G.Ye., inzh.; GORDINSKIY, A.A., inzh.; LIBERZON, L.M.,  
inzh.; RODOV, A.B., inzh.

Using the pneumatic "Analog" computer for modeling the control  
systems for high-inertia units. Priborostroenie no.11:22-23 N  
(MIRA 18:12)  
165.

ACC NR: AM6013863

Monograph

UR/

Liberzon, Leonid Mihkaylovich; Rodov, Aleksandr Borisovich

Extremal control systems (Sistemy ekstremal'nogo regulirovaniya) Moscow, Izd-vo "Energiya", 1965, 158 p. illus., biblio. 11,500 copies printed

TOPIC TAGS: automatic programming, optimal control, automatic control design

PURPOSE AND COVERAGE: The book gives a systematical presentation of theoretical principles for designing and studying extremal control systems (SER) in a form accessible to engineers working on automation of production processes. Schemes and structures of extremal regulators produced by the industry are analyzed. Examples of the application of SER in the national economy are presented. The book is intended primarily for engineers but may be useful for the students of the institutions of higher learning,

TABLE OF CONTENT [abridged]:

Foreword -- 5

Ch. 1. Principles for designing the extremal control systems -- 7

Ch. 2. Basic types of extremal control systems -- 28

Ch. 3. Dynamics of extremal control systems -- 45

Card 1/2

UDC: 62-50

ACC NR: AM6013863

Ch. 4. Stability and improvement of the performance of extremal control systems -- 91

Ch. 5. Industrial extremal regulators -- 126

Ch. 6. Examples of the application of extremal control systems in industry -- 147

Conclusion -- 155

Literature -- 157

SUB CODE: 09, 05/ SUBM DATE: 020ct65/ ORIG REF: 030/ OTH REF: 002

Card 2/2

RODOV, A.B., inzhener

Automatic blowoff of the boiler installation of electric power plants mounted on railroad cars. Elek.sta. 26 no.4: 50-52 Ap '55. (MIRA 8:6)  
(Steam boilers)

KODOV, A.B.; TIKHONOV, A.I.; KIBRIK, P.S., red.; MAYZEL', Yu.A.,  
red.; KOLOTUSHKIN, V.I., red.; BORUNOV, N.I., tekhn.red.

[Heat control and measurement instruments and automatic  
regulators of the boiler feeders of B-4000 railroad car  
mounted power plants and their maintenance] Teplovye  
kontrol'no-izmeritel'nye pribory i avtomaticheskie re-  
gulyatory pitaniia kotlov energopoezdov B-4000 i ikh ob-  
sluzhivanie. Moskva, Gosenergoizdat, 1962. 83 p.

(MIRA 15:10)

(Electric power plants)

RAKOVSKIY, Mikhail Yevgen'yevich; RODOV, A.B., red.; KANTER, A.I.,  
red.; NAZAROVA, A.S., tekhn. red.

[Top priority] Napravlenie nomer odin. Pod obshchei red. A.B.  
Rodova. Moskva, Izd-vo "Znanie," 1962. 47 p. (Narodnyi univer-  
sitet kul'tury: Tekhniko-ekonomicheskii fakul'tet, no.7)

(MIRA 15:9)

(Automation)

RODOV, A.B., inzh.

Electric water-level limit indicator in boilers. Energetik 7  
no.4:7 Ap '59. (MIRA 12:5)  
(Boilers--Equipment and supplies)

8 (6)

SOV/91-59-4-4/28

AUTHOR: Rodov, A. B., Engineer

TITLE: An Electric Indicator for the Minimum Water Level in  
Boilers (Elektricheskiy signalizator predel'nogo urovnya  
vody v kotlakh)

PERIODICAL: Energetik, 1959, Nr 4, p 7 (USSR)

ABSTRACT: The author suggests an electric water level indicator showing the minimum water level in boilers of mobile power plants. The device functions with the electric conductivity of boiler water. This device consists of two automobile spark plugs with reinforced center electrode, a rectifier-transformer ISP-2, relay RKN and relay RPT-100. Figure 1 shows the arrangement of the electric indicator. When the water level in a boiler drops below the permissible value, a circuit will be interrupted and the relays will actuate the signal equipment. There is 1 diagram.

Card 1/1

LIBERZON, L.M.; RODOV, A.B.

Using high-speed optimalizing regulator for the optimization  
of industrial objects. Priborostrojenie no.11:20-22 N '63.  
(MIRA 16:12)

LIBERZON, Leonid Mikhaylovich; RODOV, Aleksandr Borisovich;  
KAZAKEVICH, V.V., prof., red.; POPKOV, Yu.S., red.

[Optimalizing control systems] Sistemy ekstremal'nogo  
regulirovaniia. Pod red. V.V.Kazakevicha. Moskva,  
Energiia, 1965. 158 p. (Biblioteka po avtomatike, no.154)  
(MIRA 19:1)

Rodov, A. B.

AID P - 2079

Subject : USSR/Electricity

Card 1/1 Pub. 21/29

Author : Rodov, A. B., Eng.

Title : Automatic steam-blast cleaning of a boiler unit of a power generating train

Periodical: Elek. sta., 4, 50-52, Ap 1955

Abstract : The article reports the cleaning blow-out device installed on mobile power plants of the V-5000 type and gives a very detailed description of its design and functions. Further research is recommended by the author. Three diagrams.

Institution: None

Submitted : No date

MAYZEL', Yu.A., inzh.; RODOV, A.B., inzh.

Automatic control of the combustion process in the boilers of an  
electric power plant mounted on railroad cars. Elek.sta. 32  
no.8:80-82 Ag '61. (MTRA 14:10)  
(Electric power plants) (Automatic control)  
(Railroads--Cars)

RODOV, Aleksandr Borisovich; KANTER, A.I., red.; RAKITIN, I.T., tekhn.  
red.

[Automation and human labor] Avtomatizatsiya i trud cheloveka.  
Moskva, Izd-vo "Znanie," 1963. 38 p. (Narodnyi universitet  
kul'tury: Tekhniko-ekonomicheskii fakul'tet, no.2)  
(MIRA 16:2)

(Automation)

L 8787-66 EWT(d)/EEC(k)-2/EWP(k)/EWP(h)/T/EWP(l)/EWP(v) IJP(c) GG/BB  
ACC NR: AP5028033 SOURCE CODE: UR/0119/65/000/011/0022/0023

AUTHOR: Vaynshteyn-Kovalevskiy, G. Ye. (Engineer); Gordinskiy, A. A. (Engineer); Liberzon, L. M. (Engineer); Rodov, A. B. (Engineer)

ORG: none

TITLE: Simulating systems controlling high-inertia plants on an "Analog" pneumatic computer

SOURCE: Priborostroyeniye, no. 11, 1965, 22-23

TOPIC TAGS: computer simulation, pneumatic simulation

ABSTRACT: The general features of a new "Analog" pneumatic real-time simulator built by the "Teploavtomat" factory (Khar'kov) are given. The simulator capable of solving third-order differential equations with coefficients within 10-1200 sec is intended for studying automatic-control systems having

Card 1/2

Z

L 8787-66  
ACC NR: AP5028033

time constants up to 20 min; it uses a standard signal pressure of 0.2–1 kg/cm<sup>2</sup>. The simulator accuracy is seen from this data: error in solving sixth-order equations with 300 sec time constant is 3–5%; same, with 300–1200 sec, is 6–10%. An example of practical application of the simulator for optimization of a catalytic reactor is cited; deviated by 50% from the desirable point, the system, intended for carrying out an exothermic reaction in a suspended layer of catalyst, found the optimum in 2300–2300 sec (twice as long as the plant's time constant).  
Orig. art. has: 2 figures.

SUB CODE: 13 / SUBM DATE: 00 / ORIG REF: 003

09

jw  
Card 2/2

Rodov, A. M.

✓ Rodov, A. M. Sufficient conditions for existence of a function of a real variable with given upper bounds of the moduli of the function and its first five derivatives. Belorussk. Gos. Univ. Uč. Zap. Ser. Fiz.-Mat. 19 (1954), 65-72. (Russian)

*Math*  
Let  $M_k$  be the least upper bound of  $|f^{(k)}(x)|$  on  $(-\infty, \infty)$ . Given a finite set of numbers  $a_{n_1}, \dots, a_{n_k}$ , one asks for conditions which are necessary and sufficient for the existence of a function having  $M_{n_j} = a_{n_j}$  ( $j = 1, \dots, k$ ). The author has solved the problem for various selections from  $a_0, \dots, a_4$  [Izv. Akad. Nauk SSSR. Ser. Mat. 10 (1946), 257-270 = Amer. Math. Soc. Transl. no. 14 (1950); MR 8, 65; 11, 504]. Here he solves it for  $(a_0, a_1, a_2, a_5)$  and for  $(a_0, a_1, a_2, a_3, a_4, a_5)$ . R. P. Boas, Jr. (Evanston, Ill.).

1 3

*smw upf*

RODOV, V. M.  
RODOV, A. M.

"Dielectric Sphere With a Spherical Cavity in a Point Charge Electrical Field," pp 97-107, ill, 4 ref

Abst: A problem consisting in determination of three harmonic functions with three independent variables, each defined in its corresponding region, is presented. The solution is obtained in the form of an infinite series, consisting of spherical functions; the evaluation of error is easily obtained.

SOURCE: Uchenye Zapiski Belorussk. Gos. Un-ta im. V. I. Lenina MVO SSSR  
(Scientific Notes of the Belorussian State University imeni V. I. Lenin of the Ministry of Higher Education USSR), No 32 -- Physics-Mathematics Series, Minsk, Publishing House of the Belorussian State University imeni V. I. Lenin, 1957

Sum 1854

ZHILIN, G.A.; MALINOV, M.S.; RODOV, A.M.; SULIMTSEV, I.I.; SHIFRIN,  
M.G.; KISELEVA, N.P., inzh., red.; IL'IN, B.M., tekhn. red.

[TEP60 diesel locomotive for passenger trains] Passazhirskii  
teplovoz TEP60. Moskva, Transzheldorizdat, 1963. 222 p.  
(MIRA 16:9)

(Diesel locomotives)

RODOV, A.M.

Dielectric sphere with a spherical cavity in the electric field of  
a point charge. Uch.zap.BGU no.32:97-107 ' 57. (MIRA 11:12)  
(Mathematical physics)

Rodov, A. M.

Rodov, A. M. On the exposition of the Lagrange  
variational principle. Belorussk. Gos. Univ. Uč. Zap.  
Ser. Fiz.-Mat. 15 (1953), 18-21. (Russian)

A modified version of the proof of the theorem that, for  
a system of free particles, the Newtonian motion yields  
a stationary value of the integral  $\int_0^1 T dt$  ( $T$  the kinetic  
energy) if the competing motions have the same  
configurations at  $t_0$  and  $t_1$  and satisfy the energy integral with  
the same energy constant.

A. W. Wundheiler

RODOV, A. M.

Rodov, A. M. On the derivation of a general expression  
for the first variation. Belorussk. Gos. Univ. Uč.  
Zap. Ser. Fiz.-Mat. 15 (1953), 22-25. (Russian)  
A familiar derivation of Euler's variational equations,  
eliminating variations in favor of derivatives. [by]  
A. W. Windheller (Chicago, Ill.).

16  
1  
Propose

Smith  
w/c

RODOV, A.S., inzhener.

Determining the wheel load on the rails of the electric locomotives.  
Tekh.zhel.der.15 no.4:31 Je '56. (MIRA 9:9)

1. Novecherkasskiy elekrovozostroitel'nyy zaved.  
(Railroads--Rails)

The effect of fertilizers added to newly cultivated soils  
on the growth of flax. Ya. V. Pelve and A. S. Kudin.  
Voprosy Okhlopirovaniya Pover Osnovnykh Zemel,  
Vistornaya Akad. Nauk SSSR, Nauk o Zemli 1959, No.  
101. Khim. Referat. Zhur. 1960, No. 8, 10, cf. 17, 1, 16,  
and 17. K fertilizers were highly effective on all virgin  
soils. NH<sub>4</sub> fertilizers, particularly in combinations with  
K fertilizers, had an unfavorable effect on flax grown on  
very acid soils, a favorable effect on medium and weakly  
podzolized virgin soils. Phosphite in combination with  
sylvanite increased on virgin soils the total yield of flax by  
12.24 quintals/ha., and superphosphate increased it by  
4.8 quintals/ha. Phosphite is the best P fertilizer for  
ploughed virgin soils. On dark newly cultivated soils it  
increases the yields of flax straw, seeds and fiber. The P  
fertilizers investigated were: borax, B-Mg fertilizers and  
hydroboracite.

W. R. Henn

KULESHOV, V.A., inzh.; MOROSHKIN, B.N., inzh.; RODOV, A.M., inzh.

Contactless voltage regulator of the auxiliary generator  
of a gas turbine locomotive. Vest. elektroprom. 34  
no.2:25-28 F '63. (MIRA 16:2)  
(Electric locomotives) (Electric generators)  
(Electric regulators)

L 51817-65 EWT(d) IJP(c)

ACCESSION NR: AP5017007

UR/0201/64/000/004/0005/0008

AUTHOR: Ivanov, Ye. A.; Rodov, A. M.

TITLE: Solution of some boundary value problems for the Helmholtz equation  $\Delta \psi + K^2 \psi = 0$  by separation of variables

SOURCE: AN BSSR. Izvestiya. Seriya fiziki-tehnicheskikh nauk, no. 4, 1964, 5-8

TOPIC TAGS: boundary problem, linear equation, function theory, mathematical physics

ABSTRACT: The authors adduce a rule for regularization of infinite systems of linear equations which arise in using the "separation of variables" method in solving some problems in mathematical physics. The solution of these problems is reduced to finding the function  $\Psi$ , uniquely determined in an unbounded space which contains a number of regions  $T_j$  bounded by surfaces  $S_j$ . In each of the regions (including the section  $T_0$  of the space which is external to all  $S_j$ ),

Card 1/2

L 51817-65

ACCESSION NR: AP5017007

this function must satisfy:

1) the Helmholtz equation  $\Delta \psi + k^2 \psi = 0$ ;

2) given conjugate conditions for the surfaces

$S_j, j = 1, 2, 3, \dots, N$ ;

3) conditions for radiation at infinity (for the region  $T_0$ ), where boundary conditions (of the first or second kind) are given for surfaces  $N$ :  
a) of infinitely long parallel cylinders with circular or elliptical cross sections (plane problems); b) of spheroids (spheres) with a common axis of rotation (axially symmetric three-dimensional problems).

Orig. art. has: 14 formulas.

ASSOCIATION: none

ENCL: 00

SUB CODE: MA

SUBMITTED: 00

OTHER: 000

JPRS

NO REF Sov: 004

2/2  
Card

L 51017-65 EWT(d) IJP(c)

UR/0201/64/000/004/0005/0008

ACCESSION NR: AP5017007

AUTHOR: Ivanov, Ye. A.; Rodov, A. M.

TITLE: Solution of some boundary value problems for the Helmholtz equation  $\Delta \psi + k^2 \psi = 0$  by separation of variables

16

SOURCE: AN BSSR. Izvestiya. Seriya fiziki-tehnicheskikh nauk, no. 4, 1964, 5-8

TOPIC TAGS: boundary problem, linear equation, function theory, mathematical physics

ABSTRACT: The authors adduce a rule for regularization of infinite systems of linear equations which arise in using the "separation of variables" method in solving some problems in mathematical physics. The solution of these problems is reduced to finding the function  $\Psi$ , uniquely determined in an unbounded space which contains a number of regions  $T_j$  bounded by surfaces  $S_j$ . In each of the regions (including the section  $T_0$  of the space which is external to all  $S_j$ ),

Card 1/2

L 51817-65

ACCESSION NR: AP5017007

this function must satisfy:

- 1) the Helmholtz equation  $\Delta \psi + k^2 \psi = 0$ ;
- 2) given conjugate conditions for the surfaces

 $s_j, j = 1, 2, 3, \dots, N;$ 

3) conditions for radiation at infinity (for the region  $T_0$ ), where boundary conditions (of the first or second kind) are given for surfaces  $N$ :  
a) of infinitely long parallel cylinders with circular or elliptical cross sections (plane problems), b) of spheroids (spheres) with a common axis of rotation (axially symmetric three-dimensional problems).

Orig. art. has: 14 formulas.

ASSOCIATION: none

SUBMITTED: 00

NO REF Sov: 004

ENCL: 00

OTHER: 000

SUB CODE: MA

JPRS

gel card 2/2

"APPROVED FOR RELEASE: Tuesday, August 01, 2000

CIA-RDP86-00513R001445

IVANOV, Ye.A.; RODOV, A.M.

Diffraction of a plane wave on elliptical cylinders. Vestsi AN BSSR.  
(MIRA 13:10)  
Ser.fiz.-tekhn. no.2:27-36 '60.  
(Diffraction)

APPROVED FOR RELEASE: Tuesday, August 01, 2000

CIA-RDP86-00513R0014450

RCJOV, A.S., inzh.; OVUMYAN, G.G., kand.tekhn.nauk; BULATNIKOV, V.S.;  
ADAM, Ya.I.

Attachment for shaving on gear-milling machines. Vest.mashinostr.  
(MIRA 15:8)  
42 no.8:72-73 Ag '62.  
(Milling machines--Attachments)

KUL'BAKH, V.O.; RODOV, B.Ya.

Mechanization of sediment removal from filters working under pressure. Med.prom. 10 no.3:29-30 Jl-S '56. (MLM 9:11)

1. Leningradskiy khimiko-farmatsevticheskiy zavod "Farmakon."  
(FILTERS AND FILTRATION)

RODOV, B.Ya.; SELEGDINOV, A.S.; KATKOV, D.L.

Air fountain dryer. Med.prom. 14 no.11:20-21 N '60. (MIRA 13:11)

1. Khimiko-farmatsevticheskiy zavod "Farmakon."  
(BIOLOGICAL PRODUCTS--DRYING)

RODOV, D., inzh.

Coordination of assignments and means in road construction. Avt.-  
(MIRA 14:12)  
dor, 24 no.12:28 D '61.  
(Road construction)

KRAYUKHIN, A.F., inzh.; RODOV, D.Ya., inzh.

Categories of local roads. Avt. dor. 24 no. 1:28-29 Ja '61.  
(MIRA 14:2)

(Road construction)

VEL'SOVSKIY, V.N.; YEREMIN, I.A.; KAL'YANOV, N.N. [deceased];  
MISHKE, A.V.; RODOV, E.S.; SEREBRYANSKAYA, B.I.;  
GERVIDS, I.A., kand. tekhn. nauk, red.; GURVICH, E.A.,  
red. izd-va; KOMAROVSKAYA, L.A., tekhn. red.

[Mineral wool insulating materials] Mineralovatnye utepliteli. [By] V.N.Vel'sovskii i dr. Moskva, osstroizdat,  
(MIRA 16:5)  
1963. 196 p.  
(Mineral wool)

SOLYARSKIY, A.P., inzh.; ANDREYEV, V.A., inzh.; RODOV, E.S., inzh.

Producing mineral wool on multiroller centrifuges. Mont.i spets.  
rab.v stroi. 22 no.6:23-26 Jl '60. (MIRA 13:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy proyektnyy institut  
Teploprojekt.  
(Mineral wool)

BARBARKINA, T.M.; BUBYR', N.F.; BUTT, L.M.; VEL'SOVSKIY, V.N.;  
GORLOV, Yu.P.; GRIBOLEVSKIY, V.G.; DROZDOV, I.Ya.;  
YEREMIN, I.A.; ZEZN, V.G.; KEVESH, P.D.; KOCHAROV, E.P.;  
KOSYREVA, Z.S.; LEVIN, S.N.; MAKHNOVICH, A.T.; MERZLYAK,  
A.N.; RODOV, E.S.; ROZHNOV, A.I.; SEREBRYANSKAYA, B.I.;  
SUKHAREV, M.F.; USTENKO, A.A.; KHOMENKO, Z.S.; SHMIDT,  
L.M.; ETIN, A.O.; YAKHONTOVA, N.Ye.; KITAYTSEV, Vladimir  
Andreyevich, prof., doktor tekhn. nauk, red.; SKRAMTAYEV,  
B.G., glav. red.; TROKHIMOVSKAYA, I.P., zam. glav. red.;  
KRAVCHENKO, I.V., red.; KITAYGORODSKIY, I.I., red.;  
KRZHEMINSKIY, S.A., red.; ROKHVARGER, Ye.L., red.; BALAT'YEV, P.K.  
red.

[Manual on the manufacture of heat insulating and acous-  
tical materials] Spravochnik po proizvodstvu teploizo-  
liatsionnykh i akusticheskikh materialov. Moskva, Stroi-  
izdat, 1964. 524 p. (MIRA 18:1)

BERNSHTEYN, B.B., inzh.; RODOV, E.S., inzh.

Economic advantages of using fused slags in making mineral wool products. Stroi.mat. 5 no.12:6-7 D '59. (MIRA 13:3)  
(Mineral wool) (Slag)

SOLYARSKIY, A.P., inzh.; ANDREYEV, V.A., inzh.; SMORODINSKIY, M.P., inzh.;  
RODOV, E.S., inzh.

Making mineral wool by the method of vertical centrifuging. Stroi.  
mat. 6 no.12:3-5 D '60. (MIRA 13:11)  
(Mineral wool)

RODOV, G.; SEMENOV, V.

"Cleva" for climbing reinforced concrete poles. "Stroftel"  
no.7:28 J1 '61. (MIRA 14:8)  
(Electric lines—Poles)

PODRABINNIE, I.M., inzh.; RODOV, G.M., inzh.

A two-speed clutch for draw presses. Mash.Bel. no.6:87-89 '59.  
(MIRA 13:6)

(Deep drawing (Metalwork))  
(Clutches (Machinery))

S/182/60/000/002/004/012  
A161/A029

AUTHOR: Nesvit, S.M.; Rodov, G.M.; Podrabinnik, I.M.

TITLE: Automatic Press With Floating Crosshead

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 2, pp. 13 - 15

TEXT: Detailed design and operation information is given on the new "A863" (A863) high-speed sheet-stamping automatic press with "floating" crosshead, designed at Voronezhskiy CKB-10 (SKB-10) and built at Ryazanskiy zavod TMTO (Ryazan' TKPO Plant). The press is designed mainly for blanking. The design principle is illustrated in Figure 1, and design and operation in Figure 2, where "1" is the electric motor driving the shaft "2" bearing a faceplate with an adjustable crank (for adjusting eccentricity), and "4" is the "floating" crosshead performing complex reciprocative motion in vertical and horizontal direction simultaneously. The comparatively simple material feed mechanism consists of two feeding and two fixing tongs repeating the motion of the crosshead (Figure 3). The crosshead is a light-weight casting of a high-strength aluminum alloy reinforced by ribs and having a cylindrical bore in the bottom to accommodate the shank of the die and a fixing block. The fixing tongs are shown separately in

Card 1/2

S/182/60/000/002/004/012

A161/A029

Automatic Press With Floating Crosshead

Figure 4. Waste sheet metal is cut by shears installed on the output side of the press. The nominal work pressure of the press is 25 tons; the crosshead travel is adjustable between 5 and 75 mm; the crosshead can make 200, 250 and 270 runs per min; band metal width accommodated is 180 mm, and feed steps are adjustable between 10 and 150 mm; the three-speed motor works with 7, 9 and 10 kw. The kinematic connection is such that the feed step is always twice larger than the crosshead travel. Lubrication is liquid, central, from a built-in pump with a separate electric motor. The advantages of the press are its high productivity, simplicity of design, high accuracy of feed, accessibility and convenient setting, and its disadvantages the kinematic connection between crosshead travel and feed step increasing the inertia of mobile masses and impairing the stability of the press, and considerably higher weight compared to automatic sheet stamping presses with bottom drive. There are 4 figures.

Card 2/2

RODOV, G.M.; PODRABINNIK, I.M.

Development of the manufacture of presses in the German Democratic Republic. Biul. tekh.-ekon. inform. no. 4:88-91 '61.  
(MIRA 14:5)  
(Germany, East—Power presses)

RODOV, Grigoriy Matveyevich; PODRABINNIK, Izrail' Moiseyevich; LOBACHEV,  
P.V., ihzh., retsenzent; VOSKRESENSKIY, N.N., inzh., red.; UVARO-  
VA, A.F., tekhn. red.; GORDEYEVA, L.P., tekhn. red.

[Automation of stamping equipment] Avtomatizatsiya shtampovoch-  
nogo oborudovaniia. Moskva, Gos. nauchno-tekhn. izd-vo mashino-  
stroit. lit-ry, 1961. 133 p. (MIRA 14:5)  
(Automation) (Sheet-metal work) (Forging machinery)

PODRABINNIK, I.M., inzh.; RODOV, G.M., inzh.

New horizontal forging machines. Mash.Bel. no.5:230-235 '58.  
(MIRA 12:11)

(Forging machinery)

RODOV, G.N.; PODUBINNIK, I.M.

Automatic sheet-stamping presses with bottom drives. Biul.  
tekhn.-ekon.inform. no.5:30-31 '59. (MIRA 12:8)  
(Sheet-metal work) (Power presses)

RODOV, G.M.; PODRABINNIK, I.M.

Automatic sheet-metal stamping machines in East Germany. Biul.  
tekhn.-ekon.inform. no.11:81-82 '58. (MIRA 11:12)  
(Germany, East--Sheet-metal work)

*Rodov, G.M.*

RODOV, G.M.; PODRABINNIK, I.M.

Selecting crank presses. Avt.i trakt.prom. no.7:32-34 J1 '57.  
(MIRA 10:11)

(Power presses)

RODOV, G.S., kand. tekhn. nauk; MAYEVSKIY, Ye.K., inzh.

Studying the dynamic properties of mesh-reinforced concrete.  
Trudy Zap.-Sib. fil. ASIA no.7:123-133 '62.  
(MIRA 18:2)

RODOV, G.S., kand. tekhn. nauk; GOLOVACHEV, I.M., inzh.; LYUBIZER, B.M.,  
inzh.; DOLGINOV, B.N., inzh.

Mesh-reinforced roofs for large-panel buildings. Trudy Zap.-Sib.  
(MIRA 18:2)  
fil. ASIA no.7:134-140 '62.

RODOV, G.S.; KUPTSYNOVA, A.S.

Contribution to the problem of the bonding of high-strength  
reinforcement with concrete made from local materials in  
Turkmenia. Trudy Inst. antisism. stroi. AN Turk. SSR. no.2:  
45-54 '58. (MIRA 17:6)

RODOV, Grigoriy Semenovich, kand. tekhn.nauk; VEKSMAN, Abram Moliseyevich; SOLOV'YEVA, T.P., inzh., red.

[Flat ventilated roofs of corrugated mesh-reinforced concrete] Ploskaiia ventiliруемая крыша s vonistym armotsementnym pokrytiem; optyt Upravleniya "Sibakademstroy" i Zapadno-Sibirskogo filiala Akademii stroitel'stva i arkhitektury SSSR. Moskva, Gosstroizdat, 1963. 16 p.

(MIRA 16:9)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stva. 2. Rukovoditel' laboratori betona i zhelezobetona Zapadno-Sibirskogo filiala Akademii stroitel'stva i arkhitektury SSSR (for Rodov). 3. Glavnnyy inzhener Upravleniya "Sibakademstroy" (for Veksman).

(Roofing, Concrete)

RODOV, G.S., kand. tekhn. nauk; VEKSMAN, A.M.; GOLOVACHEV, I.M., inzh.;  
LYUBIZER, B.M., inzh.

Mesh-reinforced concrete roofs for large-panel houses of the  
L-464 series. Bet. i zhel.-bet. 9 no.10:453-455 O '63.  
(MIRA 16:12)

1. Glavnyy inzhener Upravleniya Sibakademstroy (for Veksmam).

KRICHEVSKIY, M.Ya.; LUTSKIY, I.M.; RODOV, G.S.; SHAKHOV, I.T.

Jointing precast reinforced concrete floors in seismic-prone regions. Izv.AN Turk.SSR no.3:83-86 '55. (MLRA 9:5)

1. Institut antiseyamicheskogo stroitel'stva AN Turkmenской SSR.  
(Precast concrete construction) (Earthquakes and building)

RODOV, G.S.

Use of prestressed reinforced concrete elements in earthquake-proof construction. Izv. AN Turk. SSR no.1:77-79 '56. (MLIA 9;8)

1. Institut antiseismicheskogo stroitel'stva AN Turkmenской ССР.  
(Earthquakes and building)  
(Prestressed concrete construction)

RODOV, G.S., kand.tekhn.nauk; PTLIPENKO, V.K., inzh.; SHIL'NIKOVSKIY, N.A.,  
inzh.; PLCHNIKOV, F.A., inzh.

Improving the technology of manufacturing prestressed reinforced  
beams on the TsKB extended stand. Trudy Zap.-Sib.fil. ASiA  
no.3:120-131 '60. (MIRA 15:2)

(Girders)

RODOV, G.S.; MAYEVSKIY, Ye.K.

Method for detecting the moment of appearance and the  
position of microracks in a reinforced concrete. Zav.lab.  
29 no.1:94-95 '63. (MIRA 16:2)

1. Zapadno-Sibirskiy filial Akademii stroitel'stva i  
arkhitektury SSSR.  
(Cement---Testing)

RODOV, G.S.; BECHENEVA, G.V.; SHABASHKEVICH, A.B.

Reinforced concrete poles with prestressed reinforcements for transmission lines. Trudy Inst. antiseism. stroi. AN Turk. SSR 3:27-51  
'58. (MIRA 13:10)

(Electric lines--Poles)

RODOV, G.S.

Electrodynamic flexure meter. Izm.tekh. no.7:19-20 J1 '61.  
(MIRA 14:6)  
(Strain gauges)

RODOV, G.S., kand.tekhn.nauk; SEMENOV, V.A., inzh.

Using concreting combines in making supports. Bet.1 zhel.-  
bet. no.6:257-261 Je '60. (MIRA 13:7)  
(Electric lines--Poles)  
(Reinforced concrete)

RODOV, G.S., inzhener.

Hydraulic jack and anchors for bundle reinforcements used in  
prestressed reinforced concrete elements. Biul.stroi.tekh. 9  
no.2:20-22 Ja '52. (MIRA 9:4)

1.DISI  
(Prestressed concrete)

RODOV, G.S.

Using local materials for high-strength concrete (Ashkhabad Province).  
Izv.AN Turk.SSR no.1:69-71 '55. (MLRA 9:5)

1. Institut antiseysmicheskogo stroitel'stva AN Turkmenской SSR.  
(Ashkhabad Province--Concrete)

FODOV, G. S.

Elasticity and Plasticity, Mechanical Properties and Testing of Materials (3166)

Izv. Akad. Nauk Turkmen. SSR, No. 4, 1953, pp 80-83

Plastic Deformation of High-Strength Wires

Author investigates possible losses of stress in a prestressed reinforcement owing to creep in the wire and recommends a momentary increase of prestressing for the elimination of these losses.

SO: Referativnyy Zhurnal -- Mekhanika, No. 4, 1954 (W-30907)

RODOV, G. S.

USSR/Engineering - Construction, Equipment Feb 52

"Hydraulic Jack and Anchor Clamps for Bundle Reinforcement of Prestressed Reinforced-Concrete Structures," G. S. Rodov, Engr

"Byul Stroitel Tekh" No 2, pp 20-22

Describes new equipment for gripping, tightening and fastening bundles of reinforcement wires 4-6 mm in diam. Equipment provides for obtaining any practically required preliminary stress of reinforcement, longitudinal or lateral, and is intended for use in motor-road bridge of the

203T20

USSR/Engineering - Construction, Equipment Feb 52  
(Contd)

Kakhovka GES dam. Anchor clamps, being made essentially of concrete, considerably decrease consumption of metal.

203T20

RODOV, G.S., kand.tekhn.nauk; SEMENOV, V.A., inzh.

Problems in the technology of producing prestressed concrete supports for overhead communication lines. Trudy Zap.-Sib.  
fil.ASiA no.3:91-110 '60.

(MIRA 15:2)

(Prestressed concrete)  
(Electric lines--Poles)